

<b>THE BRAIN: UNDERSTANDING NEUROBIOLOGY THROUGH THE STUDY OF ADDICTION</b>		
<b>Maryland Core Learning Goals – Biology</b>		
<b>Lesson</b>	<b>Goal</b>	<b>Indicator</b>
<b>4, 5</b>	<b>1.1.1</b>	Recognize that real problems have more than one solution and decisions to accept one solution over another are made on the basis of many issues.
<b>All lessons</b>	<b>1.1.2</b>	Modify or affirm scientific ideas according to accumulated evidence.
<b>3</b>	<b>1.1.4</b>	Recognize data that are biased.
<b>3</b>	<b>1.1.5</b>	Explain factors that produce biased data (incomplete data, using data inappropriately, conflicts of interest, etc.).
<b>2, 3, 4</b>	<b>1.2.1</b>	Identify meaningful, answerable scientific questions.
<b>2, 3, 4</b>	<b>1.2.2</b>	Pose meaningful, answerable scientific questions.
<b>3</b>	<b>1.2.3</b>	Formulate a working hypothesis.
<b>3</b>	<b>1.2.4</b>	Test a working hypothesis.
<b>3</b>	<b>1.2.5</b>	Select appropriate instruments and materials to conduct an investigation.
<b>3</b>	<b>1.2.6</b>	Identify appropriate methods for conducting an investigation (independent and dependent variables, proper controls, repeat trials, appropriate sample size, etc.).
<b>2, 3, 4</b>	<b>1.2.7</b>	Use relationships discovered in the lab to explain phenomena observed outside the laboratory.
<b>3</b>	<b>1.3.1</b>	Develop and demonstrate skills in using lab and field equipment to perform investigative techniques.
<b>2, 3, 4</b>	<b>1.4.1</b>	Organize data appropriately using techniques such as tables, graphs, and webs (for graphs: axes labeled with appropriate quantities, appropriate units on axes, axes labeled with appropriate intervals, independent and dependent variables on correct axes, appropriate title).
<b>1, 2, 3, 4</b>	<b>1.4.2</b>	Analyze data to make predictions, decisions, or draw conclusions.
<b>2, 3, 4</b>	<b>1.4.3</b>	Use experimental data from various investigators to validate results.
<b>2, 3, 4</b>	<b>1.4.6</b>	Describe trends revealed by data.
<b>1, 2, 3, 4</b>	<b>1.4.8</b>	Use models and computer simulations to extend his/her understanding of scientific concepts.

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<b>1, 2, 3, 4</b>	<b>1.4.9</b>	Use analyzed data to confirm, modify, or reject a hypothesis.
<b>1, 2, 3, 4</b>	<b>1.5.1</b>	Demonstrate the ability to summarize data (measurements/observations).
<b>All lessons</b>	<b>1.5.2</b>	Explain scientific concepts and processes through drawing, writing, and/or oral communication.
<b>2, 3, 4</b>	<b>1.5.4</b>	Use tables, graphs, and displays to support arguments and claims in both written and oral communication.
<b>All lessons</b>	<b>1.5.8</b>	Describe similarities and differences when explaining concepts and/or principles.
<b>All lessons</b>	<b>1.5.9</b>	Communicate conclusions derived through a synthesis of ideas.
<b>3</b>	<b>1.6.4</b>	Manipulate quantities and/or numerical values in algebraic equations.
<b>3</b>	<b>1.6.5</b>	Judge the reasonableness of an answer.
<b>3, 4, 5</b>	<b>1.7.1</b>	Apply the skills, processes, and concepts of biology, chemistry, physics, or earth science to societal issues.
<b>1, 2, 3, 4</b>	<b>1.7.2</b>	Identify and evaluate the impact of scientific ideas and/or advancements in technology on society.
<b>3, 4</b>	<b>1.7.4</b>	Recognize mathematics as an integral part of the scientific process.
<b>1, 2</b>	<b>1.7.6</b>	Explain how development of scientific knowledge leads to the creation of new technology and how technological advances allow for additional scientific accomplishments.
<b>2, 3, 4</b>	<b>3.1.1</b>	Describe the unique characteristics of chemical substances and macromolecules utilized by living systems.
<b>2, 3, 4</b>	<b>3.1.2</b>	Discuss factors involved in the regulation of chemical activity as part of a homeostatic mechanism.
<b>2, 3</b>	<b>3.2.1</b>	Explain processes and the function of related structures found in unicellular and multicellular organisms.
<b>2, 3, 4</b>	<b>3.2.2</b>	Conclude that cells exist within a narrow range of environmental conditions and changes to that environment, either naturally occurring or induced, may cause changes in the metabolic activity of the cell or organism.
<b>4</b>	<b>3.3.4</b>	Interpret how the effects of DNA alteration can be beneficial or harmful to the individual, society, and/or the environment.
<b>4</b>	<b>3.4.1</b>	Explain how new traits may result from new combinations of existing genes or from mutations of genes in reproductive cells within a population.
<b>4</b>	<b>3.5.3</b>	Investigate how natural and man-made changes in environmental conditions will affect individual organisms and the dynamics of populations.
<b>4</b>	<b>3.6.2</b>	Investigate a biological issue and be able to defend their position on topics such as animal rights, drug and alcohol abuse, viral diseases (e.g., AIDS), genetic engineering, bioethics, biodiversity, population growth, global sustainability, or origin of life.

Maryland Core Learning Goals – Algebra/Data Analysis and Probability		
Lesson	Goal	Indicator
3, 4	1.1.1	Recognize, describe, and/or extend patterns and functional relationships that are expressed numerically, algebraically, and/or geometrically.
3, 4	1.1.2	Represent patterns and/or functional relationships in a table, as a graph, and/or by mathematical expression.
3, 4	1.1.3	Apply addition, subtraction, multiplication, and/or division of algebraic expressions to mathematical and real-world problems.
3, 4	1.2.5	Apply formulas and/or use matrices (arrays of numbers) to solve real-world problems.
4	3.1.3	Calculate theoretical probability or use simulations or statistical inference from data to estimate the probability of an event.
2, 3, 4	3.2.1	Make informed decisions and predictions based upon the results of simulations and data from research.
Maryland Core Learning Goals – English		
Lesson	Goal	Indicator
All lessons	1.1.1	Use pre-reading strategies appropriate to both the text and purpose for reading by surveying the text, accessing prior knowledge, formulating questions, setting purpose(s), and making predictions.
All lessons	1.1.2	Use during-reading strategies appropriate to both the text and purpose for reading by visualizing, making connections, and using fix-up strategies such as re-reading, questioning, and summarizing.
All lessons	1.1.3	Use after-reading strategies appropriate to both the text and purpose for reading by summarizing, comparing, contrasting, synthesizing, drawing conclusions, and validating the purpose for reading.
All lessons	2.1.1	Compose to inform by using appropriate types of prose.
1, 2, 3, 4	2.1.2	Compose to describe, using prose and/or poetic forms.
All lessons	2.1.3	Compose to express personal ideas, using prose and/or poetic forms.
5	2.1.4	Compose persuasive texts that support, modify, or refute a position and include effective rhetorical strategies.
All lessons	2.2.2	Select and organize ideas for specific audiences and purposes.

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<b>1, 2, 3, 4</b>	<b>2.3.2</b>	Use various information retrieval sources (traditional and electronic) to obtain information on a self-selected and/or given topic. Electronic sources include automated catalogs, CD ROM products, and on-line services like Internet, World Wide Web, and others.
<b>All lessons</b>	<b>3.2.1</b>	Choose a level of language, formal to informal, appropriate for a specific audience, situation, or purpose.
<b>All lessons</b>	<b>4.1.1</b>	State and explain a personal response to a given text.
<b>Maryland Core Learning Goals – Health</b>		
High school health core learning goals are not published at this time. 05/01/2006		